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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,702	09/19/2003	Yolanda Prieto	CM02883JDO1	6043
22917	7590	02/23/2007	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			MALEK, LEILA	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		02/23/2007	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/23/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing.Schaumburg@motorola.com  
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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/665,702	PRIETO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Leila Malek	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 September 2003.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-31 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 09/19/2003.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Priority***

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

***Information Disclosure Statement***

2. The information disclosure statement submitted on 09/19/2003 has been considered and made of record by the examiner.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As to claim 6, the steps disclosed in the body of the claim are not the steps for decomposing a data signal, e.g. "generating a compressed data signal in the encoding portion of the digital data system" is not part of the decomposition process and it has been performed in the quantization stage. Therefore, the claim is vague and indefinite.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter which as a whole it does not accomplish a practical application. In order to accomplish a practical application, it must produce a "useful, concrete and tangible result." (see MPEP 2106, under section II, Determine What Applicant Has Invented and is Seeking to Patent, subsection A, Identify and Understand Any Practical Application Asserted for the Invention.).

- a. As to claim 1, Applicant recites an algorithm (as evidence by figures 3-5) for filtering an input data signal an a compressed data signal in a digital signal processing system, however there is no practical application disclosed for this algorithm, e.g. Applicant fails to disclose that the adaptive canonical signed digit representation is applied to the entire wavelet coefficients to achieve an image that has good peak signal to noise ratio (as cited on page 7 of invention's disclosure).
- b. As to claim 6, Applicant recites an algorithm (as evidence by figures 3-5) for decomposing data signals in a digital data system having an encoder portion and a decoder portion, however there is no practical application disclosed for this algorithm, e.g. Applicant fails to disclose that the adaptive canonical signed digit representation is applied to the entire wavelet coefficients to achieve an image that has good peak signal to noise ratio (as cited on page 7 of invention's disclosure).
- c. As to claim 17, Applicant recites an algorithm (as evidence by figures 3-5) for forward and inverse decomposing an input data signal and a compressed

data signal in a lossy encoder-decoder sub-band coding system, however there is no practical application disclosed for this algorithm, e.g. Applicant fails to disclose that the adaptive canonical signed digit representation is applied to the entire wavelet coefficients to achieve an image that has good peak signal to noise ratio (as cited on page 7 of invention's disclosure).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant's admitted prior art (Horng et al.; see the background of invention).

As to claim 1, Horng discloses a method of filtering an input data signal (see the abstract); comprising the steps of: generating wavelet coefficients for an analysis filter bank ( $H_0(z)$  and  $H_1(z)$ ) and a synthesis filter bank ( $G_0(z)$  and  $G_1(z)$ ) (see page 318, last paragraph; i.e. inherently before representing the coefficients as canonical signed digits, the coefficients need to be generated first); representing the wavelet coefficients for the analysis filter bank as canonical signed digits thereby forming a coded analysis filter bank (see the abstract, page 319, last paragraph, section III, Tables I and II); representing the wavelet coefficients for the synthesis filter bank as canonical signed digits thereby forming a coded synthesis filter bank (see the abstract lines 5-6, page 319, last paragraph, section III, Tables I and II); filtering the input data signal using the

coded analysis filter bank (see the abstract, page 318, column 2, lines 5-6); and filtering the compressed data signal (see page 318, column 1) from the channel using the coded synthesis filter bank (see the abstract, page 318, column 2, lines 5-6).

As to claim 3, Horng further discloses that the wavelet coefficients for the analysis/synthesis filter banks are rounded-off wavelet coefficients (see page 320, stage 2).

As to claim 5, Horng further discloses that the wavelet coefficients for the analysis/synthesis filter banks are, prior CSD-conversion, floating-point wavelet coefficients (see page 318, column 2, lines 1-4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horng, in view of Hartley (Optimization of Canonic Signed Digit Multipliers for Filter Design, Circuits and Systems, 1991, pages 1992-1995, vol. 4.)

6. Regarding to claims 2 and 4, Horng discloses all the subject matters claimed in claim 1, except that the wavelet coefficients for the analysis filter bank and the synthesis filter bank are, prior CSD-conversion, integer wavelet coefficients, or truncated wavelet coefficients. Although Horng does not disclose the above limitations, such limitations are merely a matter of design choice and would have been obvious to one of ordinary

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skill in the art at the time of invention as evidence by Hartley (See pages 1992 and 1993). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use integer or truncated wavelet coefficients in the FIR design of Horng in order to have different precision of the computation and error requirement in the FIR applications.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (US 5,848,164) (US 5,953,388) (US 6,456,657) (5,890,125).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek  
Examiner  
Art Unit 2611

L.M

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER